

Claims

- [c1] 1. An organic electroluminescent device, comprising:
a transparent substrate;
a plurality of pixels disposed on the transparent substrate, wherein the pixels comprise a plurality of red-light pixels, a plurality of green-light pixels and a plurality of blue-light pixels;
a red-light detector disposed adjacent to the red-light pixels on the transparent substrate;
a green-light detector disposed adjacent to the green-light pixels on the transparent substrate; and
a blue-light detector disposed adjacent to the blue-light pixels on the transparent substrate.
- [c2] 2. The organic electroluminescent device of claim 1, wherein each pixel comprises, in sequence, a transparent anode, an organic electroluminescent layer and a metal cathode.
- [c3] 3. The organic electroluminescent device of claim 2, wherein the transparent anode comprises indium-tin oxide or indium-zinc oxide.
- [c4] 4. The organic electroluminescent device of claim 2,

wherein the organic electroluminescent layer is made of small molecular organic electroluminescent material or polymer electroluminescent material.

[c5] 5. The organic electroluminescent device of claim 2, wherein the metal cathode comprises aluminum, aluminum/lithium fluoride, calcium, magnesium/silver alloy or silver.

[c6] 6. The organic electroluminescent device of claim 1, wherein each of the red-light detector, the green-light detector and the blue-light detector comprises, in sequence, a metal anode, an electroluminescent layer and a metal cathode.

[c7] 7. The organic electroluminescent device of claim 6, wherein the metal anode comprises a non-transparent metal layer.

[c8] 8. The organic electroluminescent device of claim 6, wherein the electroluminescent layer comprises an organic material or an inorganic material.

[c9] 9. The organic electroluminescent device of claim 6, wherein the metal anode has the same or different material of the metal cathode.

[c10] 10. The organic electroluminescent device of claim 1,

further comprising a light guider coupled to each of the pixels transmitting the light within the device to the corresponding detector.

[c11] 11. The organic electroluminescent device of claim 1, further comprising a driving unit coupled to each of the pixels, and each of the red-light detector, the green-light detector and the blue-light detector coupled to transfer units.

[c12] 12. The organic electroluminescent device of claim 11, wherein the driving unit and the transfer units are coupled to a control unit.

[c13] 13. A method for fabricating an organic electroluminescent device, comprising:
providing a transparent substrate;
forming a plurality of pixels on the transparent substrate, wherein the pixels comprise a plurality of red-light pixels, a plurality of green-light pixels and a plurality of blue-light pixels;
forming a red-light detector adjacent to the red-light pixels on the transparent substrate;
forming a green-light detector adjacent to the green-light pixels on the transparent substrate; and
forming a blue-light detector adjacent to the blue-light pixels on the transparent substrate.

- [c14] 14. The method for fabricating an organic electroluminescent device of claim 13, the step of forming the pixels, the red-light detector, the green-light detector and the blue-light detector comprises:
forming a patterned transparent anode and a patterned metal anode on the transparent substrate;
forming an organic electroluminescent layer on the transparent anode and a electroluminescent layer on the metal anode respectively; and
forming a metal cathode on the organic electroluminescent layer and the electroluminescent layer respectively.
- [c15] 15. The method for fabricating an organic electroluminescent device of claim 14, wherein the anode comprises indium-tin oxide or indium-zinc oxide.
- [c16] 16. The method for fabricating an organic electroluminescent device of claim 14, wherein the metal anode comprises a non-transparent metal layer.
- [c17] 17. The method for fabricating an organic electroluminescent device of claim 14, wherein the electroluminescent layer comprises an organic material or an inorganic material.
- [c18] 18. The method for fabricating an organic electroluminescent device of claim 14, wherein the organic electro-

luminescent layer is made of small molecular organic electroluminescent material or polymer electroluminescent material.

- [c19] 19. The method for fabricating an organic electroluminescent device of claim 14, wherein the metal anode has the same or different material of the metal cathode.
- [c20] 20. The method for fabricating an organic electroluminescent device of claim 14, wherein the metal cathode comprises aluminum, aluminum/lithium fluoride, calcium, magnesium/silver alloy or silver.